

Claims

What is claimed is:

1. A drive for a wheelchair having a chair frame, a pair of lesser diameter wheels mounted to the frame at a front base section thereof, and two larger diameter drive wheels with axles mounted to the frame at a rear section thereof, the drive mechanism with regard to each drive wheel comprising:

(a) first and second disks flanking the drive wheel, each disk defining a contact surface and being in fixed rotational relation with the drive wheel about the axle;

(b) a lever having a lever axis, the lever rotatable about the axle and about the lever axis;

(c) a cam selectively rotatable about the lever axis by the lever to and from a first contact position and a second non-contact position with respect to the contact surface of the first disk; and

(d) a shoe positioned for contacting the contact surface of the second disk when the cam is in the first position, thereby sandwiching the drive wheel in relation between the cam and the shoe, the drive wheel released from the sandwiching relation upon lever rotation of the cam about the lever axis to the second position, wherein the drive wheel is propelled upon lever rotation about the axle when the drive wheel is in the sandwiching relation.

2. The drive of claim 1 further comprising a handle connected to an upper portion of the lever and in fixed rotational relation with the lever.

3. The drive of claim 2 wherein said handle is substantially transverse to said lever.
4. The drive of claim 1 wherein said cam includes an opening and said lever is inserted within said opening.
5. The drive of claim 1 wherein said cam includes a greater length section and a lesser length section.
6. The drive of claim 5 wherein in said first position said greater length section contacts said outer disk.
7. The drive of claim 6 wherein in said second position said lesser length section faces said outer disk and a gap is present between said cam and said outer disk.
8. The drive of claim 1 wherein said cam is plastic.
9. The drive of claim 1 wherein said cam is cylindrical-like in shape.
10. The drive of claim 1 wherein said lesser length and greater length sections include flat surfaces.
11. The drive of claim 1 wherein said inner and outer disks are connected to each other.

12. The drive of claim 1 wherein said inner and outer disks are plastic.

13. The drive of claim 1 wherein said shoe is rubber.

14. The drive of claim 1 wherein said shoe includes an opening through which a rod is inserted.

15. The drive of claim 14 wherein said rod is connected to said lever.

16. The drive of claim 14 wherein said shoe is fixed with respect to said rod.

17. The drive of claim 1 wherein said first position is a pushing position and said second position is a non-pushing position.

18. The drive of claim 1 wherein when the cam is in said first position and upon rotation of said lever about said axis, said cam and said shoe frictionally engage said inner and outer disks, respectively, and rotate about said axle.

19. A drive for a wheelchair having a chair frame, a pair of lesser diameter wheels mounted to the frame at a front base section thereof, and two larger diameter drive wheels with axles mounted to the frame at a rear section thereof, the drive mechanism with regard to each drive wheel comprising:

(a) inner and outer disks flanking the drive wheel, each disk defining a contact surface and being in fixed rotational relation with the drive wheel about the axle;

(b) a lever having a lever axis, the lever rotatable about the axle and rotatable about the lever axis;

(c) a cam selectively rotatable about the lever axis by the lever to and from a contact position and a non-contact position with respect to the contact surface of the outer disk; and

(d) a shoe positioned for contacting the contact surface of the inner disk when the cam is in the contact position, wherein the cam and shoe frictionally engage the respective contact surfaces upon lever rotation about the axle when the cam is in the contact position, propelling said wheelchair.

20. The drive of claim 19 further comprising a handle connected to an upper portion of the lever and in fixed rotational relation with the lever.

21. The drive of claim 20 wherein said handle is substantially transverse to said lever.

22. The drive of claim 19 wherein said cam includes a opening and said lever is inserted within said opening.

23. The drive of claim 19 cam includes a greater length section and a lesser length section.

24. The drive of claim 23 wherein in said first position said greater length section contacts said outer disk.

25. The drive of claim 24 wherein in said second position said lesser length section faces said outer disk and a gap is present between said cam and said outer disk.

26. The drive of claim 23 further comprising a second greater length section.

27. The drive of claim 22 wherein said opening is an off-center opening.

28. The drive of claim 22 wherein said opening divides said cam into a greater length section and a lesser length section.

29. A drive for a wheelchair having a chair frame, a pair of lesser diameter wheels mounted to the frame at a front base section thereof, and two larger diameter drive wheels with axles mounted to the frame at a rear section thereof, the drive mechanism with regard to each drive wheel comprising:

(a) first and second covering means flanking the drive wheel, each covering means defining a contact surface and being in fixed rotational relation with the drive wheel about the axle;

(b) a lever means having a lever axis, the lever means rotatable about the axle and rotatable about the lever axis;

(c) a first contact means selectively rotatable about the lever axis by the lever to and from a contact position and a non-contact position with respect to the contact surface of the first covering means; and

(d) a second contact means positioned for contacting the contact surface of the second covering means when the first contact means is in the contact position, wherein the first contact means and the second contact means frictionally engage the first and second covering means, respectively, upon lever means rotation about the axle when the first contact means is in the contact position, propelling the wheel chair.

30. The drive of claim 29 wherein a top surface of said cam is four sided.

31. The drive of claim 29 wherein said cam is six sided.